

# Visualization and quantification of tumour biology for personalized radiotherapy

Citation for published version (APA):

Even, A. J. G. (2017). *Visualization and quantification of tumour biology for personalized radiotherapy*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20171220ae>

## Document status and date:

Published: 01/01/2017

## DOI:

[10.26481/dis.20171220ae](https://doi.org/10.26481/dis.20171220ae)

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

## General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

[www.umlib.nl/taverne-license](http://www.umlib.nl/taverne-license)

## Take down policy

If you believe that this document breaches copyright please contact us at:

[repository@maastrichtuniversity.nl](mailto:repository@maastrichtuniversity.nl)

providing details and we will investigate your claim.

Propositions belonging to the thesis

## **Visualization and quantification of tumour biology for personalized radiotherapy**

Aniek Even

1. Preselection of patients is a necessity for targeted treatments that might be too expensive or too complex to prescribe without knowing the efficacy in the individual patient. — *this thesis*
2.  $^{89}\text{Zr}$ -cetuximab PET imaging shows a large interpatient variety in locally advanced head and neck squamous cell carcinomas and provides additional information over FDG PET and EGFR expression. — *this thesis*
3. Tumour hypoxia assessed with HX4 PET is a prognostic biomarker for survival. — *this thesis*
4. Identifying therapy resistant subvolumes will give greater insight into the underlying biological processes that adversely affect patient outcome and will propel development of personalized therapies. — *this thesis*
5. Combining multiple imaging data sets will become proportionally important with the increasing amount of data available. — *valorization of this thesis*
6. The more precise radiation delivery becomes, the more important it is to accurately define the primary tumour and regional metastases for treatment planning. — *Baumann et al. 2016*
7. Imaging biomarkers have enormous potential to facilitate further advances in cancer research and oncology practice by accurately informing clinical decision-making, but must undergo rigorous scrutiny through validation and qualification to achieve this end. — *O'Connor et al. 2017*
8. In physics, you don't have to go around making trouble for yourself — nature does it for you. — *Frank Wilczek*
9. You never know what worse luck your bad luck has saved you from. — *Cormac McCarthy*
10. Your assumptions are your windows on the world. Scrub them off every once in a while or the light won't come in. — *Alan Alda*